

CLAIMS:

- 1 1. A communication system comprising:
2 a radio module operable to generate an RF signal at a predetermined frequency;
3 and
4 a directional coupler operably connected to said radio module to measure the
5 power of said RF signal, said directional coupler further comprising:
6 an envelope detector; and
7 distortion minimization circuitry operable to minimize distortion generated by
8 said envelope detector at frequencies corresponding to said predetermined
9 frequency and harmonics thereof.
- 1 2. The communication system of claim 1 wherein said envelope detector
2 comprises a detector diode and a capacitor.
- 1 3. The communication system of claim 2, wherein said distortion
2 minimization circuitry comprises a first capacitor connected to said diode, said first
3 capacitor having a capacitance value for minimizing distortion in the frequency band
4 corresponding to the fundamental frequency of said RF signal.
- 1 4. The communication system of claim 3, wherein said distortion
2 minimization circuitry further comprises a second capacitor connected to said diode, said
3 second capacitor having a capacitance value for minimizing distortion in the frequency
4 band corresponding to the second harmonic of said fundamental frequency of said RF
5 signal.
- 1 5. The communication system of claim 4, wherein said distortion
2 minimization circuitry further comprises a third capacitor connected to said diode, said
3 third capacitor having a capacitance value for minimizing distortion in the frequency
4 band corresponding to the third harmonic of said fundamental frequency of said RF
5 signal.

1 6. The communication system of claim 5, wherein said first RF signal has a
2 fundamental frequency in the 2.4 GHz band.

1 7. A method of measuring the transmitted power of an RF signal, comprising:
2 generating an RF signal at a predetermined frequency;
3 measuring the transmitted power of said RF signal using a directional coupler
4 having an envelope detector and
5 minimizing distortion generated by said envelope detector at frequencies
6 corresponding to said predetermined frequency and harmonics thereof.

1 8. The method of claim 7 wherein said envelope detector comprises a
2 detector diode and a capacitor.

1 9. The method of claim 8, wherein said distortion is minimized by
2 connecting a first capacitor connected to said diode, said first capacitor having a
3 capacitance value for minimizing distortion in the frequency band corresponding to the
4 fundamental frequency of said RF signal.

1 10. The method of claim 9, wherein said distortion is minimized by
2 connecting a second capacitor to said diode, said second capacitor having a capacitance
3 value for minimizing distortion in the frequency band corresponding to the second
4 harmonic of said fundamental frequency of said RF signal.

1 11. The method of claim 10, wherein said distortion is minimized by
2 connecting a third capacitor to said diode, said third capacitor having a capacitance value
3 for minimizing distortion in the frequency band corresponding to the third harmonic of
4 said fundamental frequency of said RF signal.

1 12. The method of claim 11, wherein said first RF signal has a fundamental
2 frequency in the 2.4 GHz band.

1 13. An integrated circuit for enabling data communication between a host device
2 and at least one wirelessly enabled external device, comprising:

3 a host interface;

4 a radio module operably connected to said host interface, wherein said radio
5 module is operable to generate an RF signal at a predetermined frequency;
6 and

7 a directional coupler operably connected to said radio module to measure the
8 power of said RF signal, said directional coupler further comprising:

9 an envelope detector; and

10 distortion minimization circuitry operable to minimize distortion generated by
11 said envelope detector at frequencies corresponding to said predetermined
12 frequency and harmonics thereof.

1 14. The communication system of claim 13 wherein said envelope detector
2 comprises a detector diode and a capacitor.

1 15. The communication system of claim 14, wherein said distortion
2 minimization circuitry comprises a first capacitor connected to said diode, said first
3 capacitor having a capacitance value for minimizing distortion in the frequency band
4 corresponding to the fundamental frequency of said RF signal.

1 16. The communication system of claim 15, wherein said distortion
2 minimization circuitry further comprises a second capacitor connected to said diode, said
3 second capacitor having a capacitance value for minimizing distortion in the frequency
4 band corresponding to the second harmonic of said fundamental frequency of said RF
5 signal.

1 17. The communication system of claim 16, wherein said distortion
2 minimization circuitry further comprises a third capacitor connected to said diode, said
3 third capacitor having a capacitance value for minimizing distortion in the frequency
4 band corresponding to the third harmonic of said fundamental frequency of said RF
5 signal.

1 18. The communication system of claim 17, wherein said first RF signal has a
2 fundamental frequency in the 2.4 GHz band.